

From the INTERNATIONAL BUREAU

**PCT****NOTIFICATION CONCERNING  
TRANSMITTAL OF COPY OF INTERNATIONAL  
PRELIMINARY REPORT ON PATENTABILITY  
(CHAPTER I OF THE PATENT COOPERATION  
TREATY)**

(PCT Rule 44bis.1(c))

To:

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Date of mailing (day/month/year)  
12 October 2006 (12.10.2006)

Applicant's or agent's file reference  
10009228WO01

**IMPORTANT NOTICE**

International application No.  
PCT/JP2005/006226

International filing date (day/month/year)  
24 March 2005 (24.03.2005)

Priority date (day/month/year)  
30 March 2004 (30.03.2004)

Applicant

CANON KABUSHIKI KAISHA et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 10009228WO01	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/JP2005/006226	International filing date ( <i>day/month/year</i> ) 24 March 2005 (24.03.2005)	Priority date ( <i>day/month/year</i> ) 30 March 2004 (30.03.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant CANON KABUSHIKI KAISHA		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

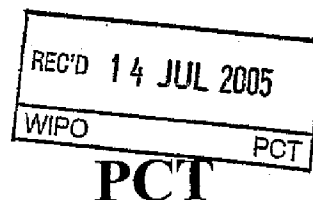
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 04 October 2006 (04.10.2006)
Facsimile No. +41 22 338 82 70	Authorized officer  <div style="text-align: center; font-weight: bold;">Yoshiko Kuwahara</div> e-mail: pt07@wipo.int

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
OKABE, Masao

No. 602, Fuji  
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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 12.7.2005

Applicant's or agent's file reference  
10009228W001

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.  
PCT/JP2005/006226

International filing date (day/month/year)  
24.03.2005

Priority date (day/month/year)  
30.03.2004

International Patent Classification (IPC) or both national classification and IPC  
Int.Cl.<sup>7</sup> H01L27/146, 21/339, 21/8234, 27/088, 29/762

Applicant  
CANON KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion

23.06.2005

Name and mailing address of the ISA/JP

**Japan Patent Office**

3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan

Authorized officer

**Haruka ONDA**

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4L 8934

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/006226

**Box No. I      Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/006226

**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Statement**

Novelty (N)	Claims	2-10	YES
	Claims	1	NO
Inventive step (IS)	Claims	2-10	YES
	Claims	1	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

**2. Citations and explanations**

D1: JP 2000-353756 A (TOSHIBA CORPORATION) 2000.12.19, The whole document (Family: none)

D2: JP 2002-329793 A (MITSUBISHI ELECTRIC CORPORATION) 2002.11.15, The whole document (Family: none)

D3: JP 2000-077613 A (NEC CORPORATION) 2000.03.14, The whole document

D4: JP 7-321220 A (NIPPON DENSO CO., Ltd.) 1995.12.08, The whole document ,Fig.5 (Family: none)

D5: JP 2004-158508 A (NIPPON TEXAS INSTRUMENTS INCORPORATED) 2004.06.03, The whole document (Family: none)

D6: JP 2003-333431 A (VICTOR COMPANY OF JAPAN, LTD.) 2003.11.21, The whole document (Family: none)

The subject matter of claim 1 is disclosed in the document D1 cited in the ISR. As shown in Fig.9 (a) and (b), both the surface channel type n type MOS transistor and the buried channel n type transistor have n type impurity region below its gate electrode of said surface channel type and buried channel type MOS transistors.

The subject matter of claims 2 to 10 meets the requirements of novelty and an inventive step.

The closest prior art document D1 discloses a semiconductor apparatus but doesn't disclose a solid state image pickup device.

The prior art documents D5 and D6 disclose a solid state image pickup device but don't disclose the device comprising a pixel having a plurality of MOS transistors, and an impurity region which conductive type is the same as said MOS transistors is provided below a gate electrode and between source and drain region of said MOS transistors

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006226

**Box No. VIII** Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The term [...between source and drain regions ...] used in Claim 1 and [...below a gate and between source and drain regions of said buried channel type and surface channel type MOS transistors ...] used in Claim 2 render the definition of the subject matter of said claim unclear for the following reason:

Consequently they render the position of a first conductive type impurity region unclear.